

File Yucca Mt. 1

**From:** "Barbara Byron" <Bbyron@energy.state.ca.us>  
**To:** <ARJones@chp.ca.gov>, <dpierce@chp.ca.gov>, "Joe McEnulty"  
<JMcEnulty@chp.ca.gov>, <mchaffee@chp.ca.gov>, <jdavis@consrv.ca.gov>,  
<mreichle@consrv.ca.gov>, <e63@cpuc.ca.gov>, <stepekj@cwpswrcb.ca.gov>, <Ebailey@dhs.ca.gov>,  
"Robert Greger" <RGreger@dhs.ca.gov>, <swoods1@dhs.ca.gov>, <Susan.Durbin@doj.ca.gov>,  
<Bill.Costa@dot.ca.gov>, <Brad\_Mettam@dot.ca.gov>, "Charleen Fain-Keslar"  
<Charleen\_Fain-Keslar@dot.ca.gov>, "Andrew Burow" <ABurow@dtsc.ca.gov>, "Robert Laurie"  
<Rlaurie@energy.state.ca.us>, <dbenson@fire.co.san-bernardino.ca.us>,  
<Paul@ideal-identification.com>, <Ben\_Tong@oes.ca.gov>, <bill\_Potter@oes.ca.gov>,  
<Mark.Johnson@oes.ca.gov>, <Phyllis\_Cauley@oes.ca.gov>, <Richard@ospr.dfg.ca.gov>,  
<NTILG@parks.ca.gov>, <singh@rb6s.swrcb.ca.gov>, <Tpost@rb6v.swrcb.ca.gov>, "Andrew Remus"  
<Inyoyucca@telis.org>  
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**Subject:** Scientists' Concerns About the Yucca Mt. Project

Here's a good summary of an article published in Science expressing scientists' concerns that approval of the Yucca Mt. site is premature.

Their conclusions tend to agree with those of our Yucca Mt. Technical Review Group--namely that recommending site approval of the Yucca Mountain Site is premature and that DOE has provided insufficient information on which to make a decision on the suitability of the Yucca Mountain Site.

I've pasted the article below for you, but the direct link follows:

<http://www.sciam.com/news/042602/2.html>

## NUCLEAR WASTE

### Scientists Voice Concerns about Yucca Mountain Repository

Normally, engineers can assess and improve upon the reliability of a new technology through operation. If a model car breaks down, the problem can be fixed before it hits the market. But not all developers have that luxury. In the case of geologic storage of high-level nuclear waste, currently planned for Nevada's Yucca Mountain, the potential consequences of a leak leave little room for experimental error. Such a plan, say researchers writing in the current issue of the journal Science, demands a much sharper analysis of geologic and atomic-scale processes than has been conducted thus far. For this reason, they argue, President George W. Bush's recent decision to recommend Yucca Mountain as a disposal site for high-level nuclear waste is premature, and the plans should not advance until the relevant scientific issues have been thoroughly explored.

The push to establish a repository at Yucca Mountain is based on political considerations and national security concerns, not hard science, Rodney Ewing of the University of Michigan and Allison Macfarlane of the Massachusetts Institute of Technology, assert. They point to recent shifts in the design strategy to support their view. For one, the role of engineered barriers for the waste has increased. Originally, Yucca Mountain was selected because of its natural characteristics: a repository could be placed 300 meters above the water table and, presumably, kept dry. But subsequent research results indicated that water may actually circulate upwards through the mountain, and near the proposed waste storage area. Accordingly, the plan now depends on engineered barriers, including durable drip shields that would prevent water from carrying away radioactive material. "By lessening the importance of geologic barriers, the properties of the site become less important," the authors write. "Indeed, the original concept of geologic disposal has been turned on its ear."

But this is hardly the only problem with the Yucca Mountain proposal, Ewing and Macfarlane observe. Other long-term factors, such as the influence of climate change, the durability of the metallic waste packages, and the impact of volcanic activity require detailed probing as well. Yucca Mountain may yet prove to be a good location, the researchers concede, but the proposal warrants more thoughtful and

complete consideration before any such decision can be made. Quoting Thomas Jefferson, they conclude, "Delay is preferable to error." \*Greg Mone

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CC: "Steve Larson" <Slarson@energy.state.ca.us>, <David.Kim@wdc.ca.gov>, <Deborah.slom@wdc.ca.gov>